

surface adapted for receiving heat from the at least one heat generating component and a plurality of micro tubes having a flattened heat transfer surface, said low profile metal unitary member having [with] a micro tube inlet and a micro tube outlet, said low profile metal [extrusion] unitary member providing an entirely metallic thermal path for conducting heat from said first exterior [extrusion] surface to a heat transfer fluid contained within said plurality of micro tubes;

an inlet tube;

and inlet end cap interconnecting the micro tube inlets in fluid communication and connecting the micro tube inlets in fluid communication with said inlet tube;

an outlet tube;

an outlet end cap interconnecting the micro tube outlets in fluid communication and connecting the micro tube outlet in fluid communication with said outlet tube;

means for circulating said heat transfer fluid through said inlet tube, said inlet end cap, the plurality of micro tubes of said low profile extrusion, said outlet end cap, and said outlet tube; and

means for removing heat from said heat transfer fluid.

2. (Amended) The cooling apparatus of claim 1, wherein said low profile metal [extrusion] unitary member is formed of a first metal material.

4. (Amended) The cooling apparatus of claim 2, wherein said low profile metal [extrusion] unitary member is plated on an exterior surface with a second metal material.

6. (Amended) The cooling apparatus of claim 1, wherein said low profile metal [extrusion] unitary member further comprises a plurality of fins on a second exterior surface opposite said first exterior extrusion surface adapted for receiving heat.

7. (Amended) The cooling apparatus of claim 1, wherein said low profile metal [extrusion] unitary member further comprises a plurality of fins or grooves on an interior surface of each of said plurality of micro tubes.

8. (Amended) A cooling apparatus for removing heat from at least one heat generating component, said cooling apparatus comprising:

a low profile [extrusion] unitary member having a flattened exterior extrusion surface adapted for receiving heat from the at least one heat generating component and a plurality of micro tubes with a micro tube inlet and a micro tube outlet, said low profile [extrusion] unitary member having [a flattened interior extrusion surface forming a portion of each of said plurality of micro tubes] a plurality of micro tubes having a flattened heat transfer surface;

[an inlet tube;

and inlet end cap interconnecting the micro tube inlets in fluid communication and connecting the micro tube inlets in fluid communication with said inlet tube;

an outlet tube;

an outlet end cap interconnecting the micro tube outlets in fluid communication and connecting the micro tube outlet in fluid communication with said outlet tube;

a heat transfer fluid;]

means for circulating a [said] heat transfer fluid through said [inlet tube, said inlet end cap, the] plurality of micro tubes of said low profile [extrusion] unitary member], said outlet end cap, and said outlet tube]; and

means for removing heat from said heat transfer fluid.

10. (Amended) The cooling apparatus of claim 8, wherein said low profile [extrusion] unitary member is formed of a metal material.

21. (Amended) A cooling apparatus for removing heat from at least one heat generating component, said cooling apparatus comprising:

a low profile metal [extrusion] unitary member having a first exterior extrusion surface adapted for receiving heat from the at least one heat generating component and a plurality of micro tubes with a micro tube inlet and a micro tube outlet, said low profile metal [extrusion] unitary member providing an entirely metallic thermal path for conducting heat from said first exterior extrusion surface to a heat transfer fluid contained within said plurality of micro tubes having a flattened heat transfer surface;

and inlet end cap interconnecting the micro tube inlets in fluid communication;

an outlet end cap interconnecting the micro tube outlets in fluid communication;

means for circulating said heat transfer fluid through said inlet end cap, the plurality of micro tubes of said low profile extrusion and said outlet end cap; and